



## INTRODUCTION

This instrument is a portable 3 1/2 digit compact-sized digital thermometer designed to use external K-type and J-type thermocouple as temperature sensor. It also has the feature that sensor offset can be adjusted for in the field.

An SMP type connector is provide in the top of the unit to plug in the thermocouple.

## SAFETY INFORMATION

It is recommended that you read the safety and operation instructions before using the thermometer.

### WARNING

To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24V AC or DC.

### WARNING

To avoid damage or burns, do not make temperature measurement in microwave ovens.

### CAUTION

Repeated sharp flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.

## Packing List

1. HH501AJK handheld thermometer with protective boot.
2. Teflon insulated beaded wire thermocouple.
3. 9 volt battery.

## OPERATING INSTRUCTIONS

### Power Button

Press the "①" button to turn on or off the thermometer.

### ELECTRICAL

#### Temperature Scale:

Celsius or Fahrenheit user-selectable.

#### Measurement Range:

K-Type -100°C to 1372°C, (-150°F to 1999°F)  
J-Type -100°C to 1200°C, (-150°F to 1999°F)

Resolution: 1 degree or 0.1 degree from -59.9

to 199.9 degree C or F (autoranging).

Accuracy: Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F), for 1 year, not including thermocouple error.

±(0.1% rdg + 1°C) on °C  
±(0.1% rdg + 2°F) on °F

Temperature Coefficient: 0.1 times the applicable accuracy specification per °C from 0°C to 18°C and 28°C to 50°C (32°F to 64°F and 82°F to 122°F).

**Input Protection:** 24V dc or 24V ac rms maximum input voltage on any combination of input pins.

**Reading Rate:** 2.5 times per second.

**Input Connector:** Accepts standard miniature thermocouple connectors (flat blades spaced 7.9mm, center to center). (SMP type)

**ENVIRONMENTAL**  
Ambient Operating Ranges:  
0°C to 50°C (32°F to 122°F) <80% R.H.

Storage Temperature:  
-20°C to 60°C (-4°F to 140°F) <70% R.H.

**GENERAL**  
Display: 3 1/2 digit liquid crystal display (LCD) with maximum reading of 1999.  
Overload: "OL" is displayed.

**Battery:** Standard 9V battery (NEDA 1604, IEC 6F22, 006P).

**Battery Life:** 200 hours typical with carbon zinc battery.

**Auto Power Off:** Approximately 20 minutes.

**Dimensions:** 192mm(H) x 91mm(W) x 52.5mm(D).

**Weight:** 365g.

**Supplied Wire:** 3 feet type "K" beaded wire thermocouple teflon insulated. Maximum insulation temperature 200°C (392°F). Wire accuracy ±2.2°C or ±0.75% of reading (whichever is greater) from 0°C to 800°C.

## HOLD Button

Press the "HOLD" button to enter the Data Hold mode, the "HOLD" annunciator is displayed at the higher-center of display.

When HOLD mode is selected, the thermometer held the present readings and stops all further measurements.

Press the "HOLD" button again cancels HOLD mode, causing thermometer to resume taking measurements.

## TYPE Button (APO)

Press "TYPE" button to select the type of Thermocouple "K" or "J". Make sure the proper type has been selected.

Press and hold down "APO" button for 2 seconds to trigger on or off APO (Automatic Power Off) mode, and then APO annunciator will appear or disappear on the display.

Power is automatically turn off, if no operation for a period of time, and "APO" annunciator is displayed at upper-left corner when APO function is enabled.

## MIN MAX Button

Press "MIN MAX" button to enter the MIN MAX recording mode. displays the Maximum reading, Minimum reading, "MAX-MIN" reading stored in record mode).

Press "MIN MAX" button to cycle through the MAX, MIN, MAX -MIN readings. In this mode, press "HOLD" button to stop recording, all values are frozen, press again to restart recording.

In this mode, the APO function and other buttons are disabled, excluding "HOLD" and "APO" buttons.

To prevent accidental loss of MAX, MIN and MAX-MIN, in this mode can only be cancelled by pressing and holding down the "MIN MAX" button for 2 seconds to exit and erased recorded reading.

## ADJUST THERMOCOUPLE OFFSET

Readings are displayed in either degrees Celsius (°C) or degrees Fahrenheit (°F). When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off.

To change the temperature scale, press the "°C/°F" button.

## DISPLAY BACK-LIGHT

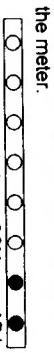
Pressing the "DISPLAY BACK-LIGHT" button to trigger on the Back-Light.

Pressing the "DISPLAY BACK-LIGHT" button again to make the Back-Light lighter and press "DISPLAY BACK-LIGHT" button once more to cancel the Back-Light function.

Back-Light on → lighter → Back-Light off

## PROCEDURE OF CALIBRATION

1. It will not enter into calibration procedure at LOWBAT condition.
2. Make COM & ADJ pin short and then turn on the meter.



The procedure as follow:

Supply 35°C (K type) from calibrator and LCD displayed nearly 35°C → press backlit button → LCD displayed -00.1° → press backlit button → supply 130°C (K-type) from calibrator and LCD displayed nearly 130°C → press backlit button → OFF automatically(calibration is completed)

3. Take off the short pin when the calibration is completed then temperature measurement is workable.

## OPERATOR MAINTENANCE

### WARNING

To avoid possible electrical shock, disconnect the thermocouple connectors from the thermometer before removing the cover.

#### Battery Replacement

1. Power is supplied by a 9 volt "transistor" battery (NEDA 1604, IEC 6F22).

2. The "BAT" appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.

3. Remove the battery from battery contacts and replace.

4. When not use for long time remove battery.

5. Do not store in a place with high Temp. or high humidity.

**Cleaning**  
Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

**exp:** ice point at 0°C  
boiling water at 100°C

1. Insert the thermocouple into a known temperature (T) until the display equal to known temperature (T).

2. Press "▲" or "▼" to add or subtract the value.

3. It can be adjusted ±6°F(±3°C) of default.

If you can't adjust your T/C, please check your T/C or send the meter to be calibrated.

4. Press "ENTER" button to confirm.